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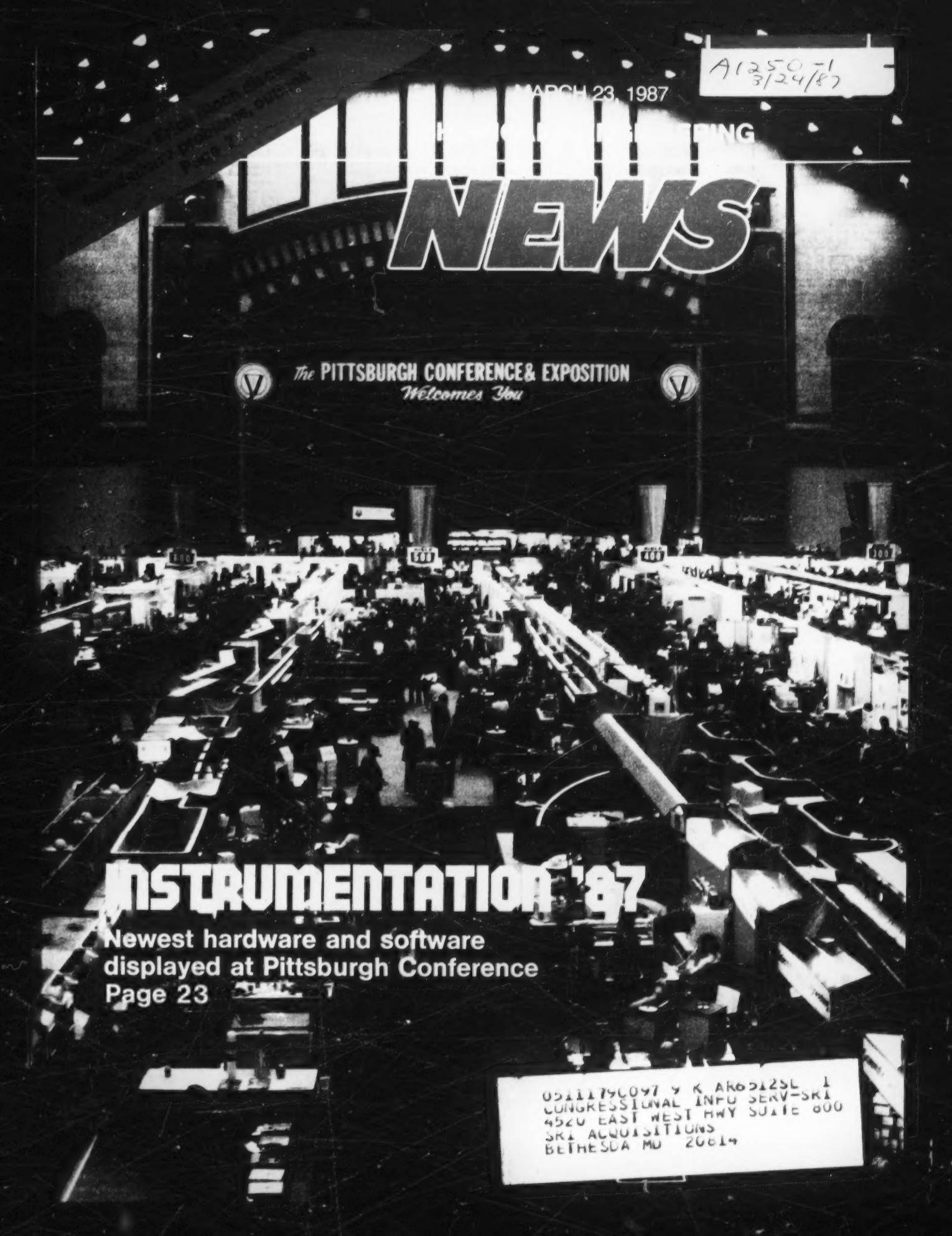
MARCH 23, 1987

NEWS



INSTRUMENTATION '87

Newest hardware and software displayed at Pittsburgh Conference

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BETHESDA MD 20814

CHEMICAL & ENGINEERING
NEWS
Volume 65, Number 12
CENEAR 65 (12) 1–102
ISSN 0009-2347
MARCH 23, 1987

News of the Week

■ **Occupational Safety & Health Administration is scheduled to hold hearings on proposed regulations for lab worker safety.** **Page 4**

■ **NL Chemicals sues United Catalysts over alleged infringement of dispersant patents and the misappropriation of confidential information.** **Page 5**

■ **Report on U.S. energy supply and its role in national security urges U.S. to reduce dependence on oil imports.** **Page 5**

■ **Bayer is sued by hemophiliacs who claim they acquired AIDS from taking Factor VIII, an antihemophilia drug.** **Page 6**

■ **In effort to combat acid rain, President Reagan announces he will seek $2.5 billion to develop clean-coal technologies.** **Page 6**

Cover: Photo by C&EN's James H. Krieger

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Chemical industry R&D funding will increase this year, but at a slower rate than last year, according to NSF survey. **Page 15**

International Business

Japan's chemical industry weathers recession triggered by stronger yen, foresees more profitable times. **Page 16**

Government

Department of Defense is urged to strengthen defense technology base through more university research funding, industry incentives. **Page 18**

Science

NASA's supercomputer system, considered the world's most advanced and powerful, begins operating. **Page 21**

Books

"The Biotechnological Challenge" examines the role and future of biotechnology in Third World countries. **Page 77**

Instrumentation '87

The Pittsburgh Conference, a showcase for developments in analytical chemistry and spectroscopy, offers a look at the newest hardware and software. **Page 23**

Growth in Chemical R&D Funding Slowing

In its annual survey of corporate research and development budgets, the National Science Foundation projects another increase for all U.S. industry and for the chemical industry in 1987—albeit a slowdown for both from 1986's growth. However, unlike last year, it predicts that growth in chemical industry R&D funding will outpace the industry average.

Total industrial R&D spending this year will increase 4.9% from 1986 to a total of about $59.5 billion, according to the survey. For chemicals and allied products, R&D spending will rise 5.5% to about $9.6 billion.

The growth forecast for all industry represents quite a slowdown from last year's 6.6% growth from 1985. According to NSF, one of the reasons cited by those surveyed for the slower growth is uncertainty about business conditions. "For the second year in a row, company officials expressed great uncertainty about business conditions for the coming year and were hesitant to forecast a firm 1987 R&D growth figure based on their current preliminary budget plans," the report says.

NSF points out that although R&D officials noted a relatively healthy economy, a number of factors—including lack of capital investment despite low interest rates, concern over profitability, and their companies' involvement in takeovers, mergers, and reorganizations—made it unusually difficult to make final plans for this year's R&D activities.

Despite its better-than-average 5.5% growth, the chemical industry will be outpaced in R&D spending growth this year by three major industry sectors: electrical equipment (8.7% to $12.5 billion), professional and scientific instruments (6.0% to $5.3 billion), and machinery (5.9% to $10.8 billion). Industry sectors lagging the chemical industry's growth rate will be aircraft (4.5% to $4.6 billion), motor vehicles and motor vehicle equipment (no growth at $6.6 billion), and all other industries combined (1.0% to $10.0 billion).

Last year, when the chemical industry's growth in R&D spending (5.8% to $9.1 billion) lagged the 6.6% average increase for all U.S. industry, there was a similar mix of sectors that outpaced and trailed the chemical industry. Those whose R&D funding grew more than for chemicals were electrical equipment (11% to $11.5 billion), motor vehicles and motor vehicle equipment (8.2% to $6.6 billion), and machinery (7.4% to $10.2 billion). Those sectors trailing chemical industry growth were aircraft (4.8% to $4.4 billion), professional and scientific equipment (4.2% to $5.0 billion), and all others (3.1% to $9.9 billion).

The NSF survey falls much in line with C&EN's own survey of R&D spending by 12 major chemical companies (C&EN, Jan. 19, page 11). The C&EN survey projects that chemical R&D spending will rise about 4% this year, but that the growth will be down substantially from 7% last year. However, the NSF survey includes more of the specialty chemical and pharmaceutical industries, both high R&D spenders, than does the C&EN survey.

NSF finds that for industrial chemicals, R&D spending will rise about 3% in 1987, the same percentage as in 1986. NSF says that companies are cutting back on R&D spending on maturing products and concentrating instead on newer industrial specialties such as chemicals for the electronics industry and on engineering plastics. These companies, NSF says, are also active in biotechnology, plant biology, and animal science.

One of the changes noted by the survey is the relationship between R&D spending and the number of R&D professionals employed. In the 1970s, NSF notes, data showed a high correlation between real-dollar changes in R&D spending and annual changes in the number of full-time-equivalent R&D scientists and engineers employed by industry. Such employment is the sum of the number of scientists and engineers employed full time in R&D plus the full time equivalent of those working part time in R&D.

Since 1982, R&D spending in constant dollars has been increasing at a somewhat faster rate than the rise in full-time-equivalent employment of R&D scientists and engineers. Many R&D managers say that their increased budgets are being spent on advanced technological equipment and instrumentation systems.

William Storck, New York

Chemical industry R&D spending to rise 5.5% this year

$ billions	1987 projected	1988 projected	1985	% annual change 1987	% annual change 1988
Chemicals and allied products	$ 9.6	$ 9.1	$ 8.6	5.5%	5.8%
Machinery	10.8	10.2	9.5	5.9	7.4
Electrical equipment	12.5	11.5	10.4	8.7	10.6
Motor vehicles and motor vehicle equipment	6.6	6.6	6.1	0.0	8.2
Aircraft	4.8	4.4	4.2	4.5	4.8
Professional and scientific instruments	5.3	5.0	4.8	6.0	4.2
All others	10.0	9.9	9.6	1.0	3.1
TOTAL[a]	$59.5	$56.7	$53.2	4.9%	6.6%

a Does not add because of rounding. Source: National Science Foundation